

Lnc Profiler™ qPCR Arrays

Quantitate Human and Mouse long non-coding RNAs (lncRNAs) by real-time qPCR

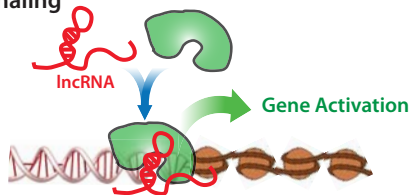
Long non-coding RNAs

Long non-coding RNAs (lncRNAs) and large intergenic non-coding RNAs (lincRNAs) are emerging as master regulators of embryonic pluripotency, differentiation, patterning of the body axis and promoting developmental transitions. lncRNAs are larger than 200 nucleotides in length and are pervasively expressed across the genome. lncRNAs maintain the commitment to specific cellular fates through modification and remodeling of chromatin at the epigenetic level.

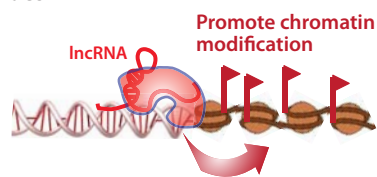
Dysregulated expression of lncRNAs has been shown to be associated with a broad range of diseases such as Alzheimer's, psoriasis and many cancers. Studying the expression patterns of lncRNAs will be a crucial method to understanding the roles they play in many model systems. SBI has built a sensitive, accurate and robust qPCR array to enable researchers to closely profile the expression changes in the top lncRNAs known to date. All of the lncRNAs on the qPCR array have validated primer sets for well-annotated lncRNAs that are registered in the lncRNA database created by Dr. John Mattick (www.lncrnadb.org).

Potential functions of lncRNAs

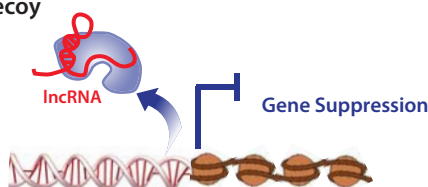
I. Signaling



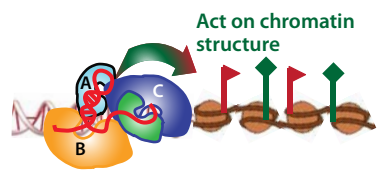
II. Guides



III. Decoy



IV. Scaffolds



Highlights

- lncRNAs are longer than 200 nt
- Master regulators of cell specification
- Involved in diseases and cancer
- Sensitive and accurate qPCR array and cDNA kit to profile top lncRNAs

I. Signaling: Their expression can be stimulated in response to certain stimuli, such as cellular stress and temperature, like XIST and AIR.

II. Decoys: Specific lncRNAs are transcribed and then bind to and titrate away protein factors such as MALAT1.

III. Guides: lncRNAs can be molecular guides by localizing particular ribonucleoprotein complexes to specific chromatin targets. HOTTIP is a prime example.


IV. Scaffolds: lncRNAs can assemble of protein complexes to form new functions. HOTAIR and ANRIL are examples of scaffold lncRNAs.

Graphic at right adapted from: Wang, KC and Chang HY, Molecular Mechanisms of Long Noncoding RNAs. Mol Cell. 2011 Sep 16;43(6):904-14.

Profile the expression of lncRNAs using qPCR

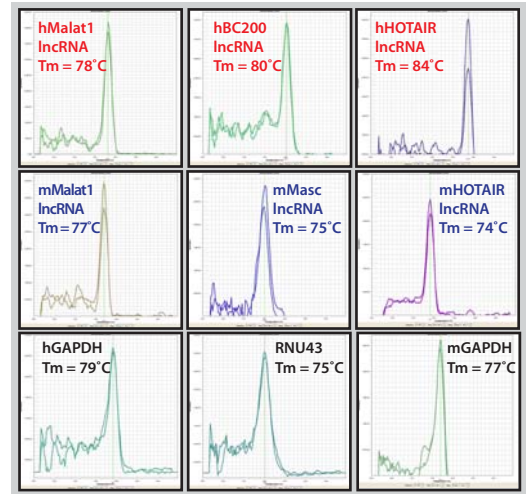
SBI's LncProfilers are complete cDNA synthesis kits combined with a 96-well based qPCR assay sets for either Human or Mouse lncRNAs. The qPCR assays have been validated across numerous cell types for robust and specific performance. Some lncRNAs have endogenous polyA tails, while other lncRNAs do not. To enhance qPCR assay performance, the cDNA synthesis kit includes reagents to polyadenylate all lncRNAs before cDNA conversion using the oligo dT adaptor and random primers.

Human LncProfiler qPCR Array




	1	2	3	4	5	6	7	8	9	10	11	12
A	21A	75K	75L	Air	AK023948	Alpha 280	Alpha 250	ANRIL	anti-NOS2A	antiPeg11	BACE1AS	BC200
B	CAR Intergenic	DHFR upstream	Dio3os	DISC2	DLG2AS	E2F4 antisense	EgoA	EGOB	Emx2os	Evl and EVF2	GAS5	Gomafu
C	H19	H19 antisense	H19 upstream	HAR1A	HAR1B	HOTAIR	HOTAIRM1	HOTTIP	Hoxa11as	HOXA3as	HOXA6as	HULC
D	IGF2AS	IPW	Jpx	Kcnq1ot1	KRASP1	L1PA16	p21	RoR	SFMBT2	VLDLR	LOC 285194	LUST
E	Malat1	mascrNA	MEG3	MEG9	MER11C	ncr-uPAR	NDM29	NEAT1	Nespas	NRON	NTT	p53 mRNA
F	PCGEM1	PR antisense	PRINS	PSF inhibiting	PTENP1	RNCR3	SAF	SCA8	snaR	SNHG1	SNHG3	SNHG4
G	SNHG5	SNHG6	Sox2ot	SRA	ST7OT	TEA ncRNAs	Tmevpg1	TncRNA	Tsix	TUG1	UCA1	UM9-5
H	WT1-AS	Xist	Y RNA-1	Zeb2NAT	Zfas1	Zfx2as	18S rRNA	RNU43	GAPDH	LAMIN A/C	U6	No assay control

Specificity tests using dissociation analysis

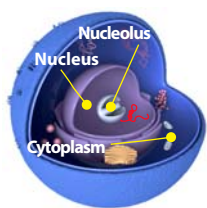
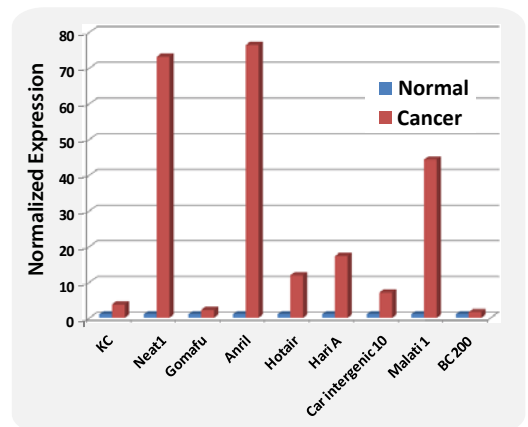


Mouse LncProfiler qPCR Array



	1	2	3	4	5	6	7	8	9	10	11	12
A	Adapt33	Air	AK007836	AK141205	AK028326	AK082072	ATIA	antiPeg11	B2 SINE RNA	BACE1AS	BC1	BGn-As
B	BORG	CDR1-antisense	Dio3os	Dlx1as	Emx2os	Evl2	Foxn2-as	GAS5	Gomafu	Gtl2-as	H19	H19 antisense
C	HOTAIR	HOTTIP	Hoxa11as	IGF2AS	Jpx	Kcnq1ot1	Linc1242	Linc1331	Linc1368	Linc1612	Linc1547	Linc1582
D	Linc1609-long	Linc1609-short	Linc1610-long	Linc1610-medium	Linc1610-short	Linc 1623	Linc1633	LincENC1	LincRNA-Cox2	LincRNA-p21	LincRNA-Sox2	LINC -MD1
E	LXRBSV	Malat1	mascrNA	MEG3	MEG9	MSUR1	Msx1as	Neat1 v1/MEN	Neat1 v2/Men beta	Nespas	Nkx2.2AS	NRON
F	Otx2os	PINC	PINC 1Kb isoform	Pidi	Recom. hot spot	Repa transcript	Rian	Rmst	RNCR3	SCA8 (KLHL1-AS)	Six3os	Six3os-clone9
G	SNHG1	SNHG3	SNHG4	SNHG5	SNHG6	Sox2ot	SRA	Tsix	TUG1	Vax2os1	VL30RNAs	WT1-AS
H	Xist	Y RNAs	Zeb2NAT	Zfas1	Zfx2as	Mistral	18S rRNA	RNU43 (snoRNA)	GAPDH	Beta Actin	U6 snRNA	No assay control

Profile LncRNAs in Cancer

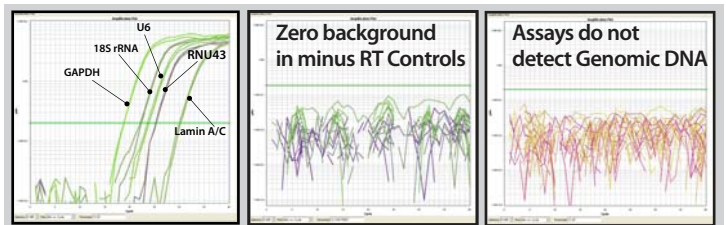


Subcellular reference controls

LncRNAs can localize and function in the nucleolus, nucleus and in the cytoplasm. The LncProfiler qPCR array includes RNA reference controls to allow for subcellular fractionation studies to identify and profile three separate subcellular compartments.

- Nucleolus: SnoRNA RNU43 (and some 18S rRNA)
- Nucleus: Small Nuclear splicing snRNA U6B
- Cytoplasm: GAPDH, Lamin A/C (Human Array) or Beta-Actin (Mouse array) and 18S rRNA

Normalization references and controls



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